

IN THE SPECIFICATION

Please amend the specification as follows.

1. Please amend the paragraph starting on page 1, line 1 of the application as follows:

b1 The present invention relates to a method of determining filter coefficients from Line Spectral Frequencies (LSFs) comprising recomputing  $P(z)$  and  $Q(z)$  polynomials and comprising calculating the  $\omega_i$  coefficients.

2. Please amend the paragraph starting on page 3, line 13 of the application as follows:

b2 Recomputing LPC filter coefficients  $a_i$  from LSFs is much less computationally intensive than computing the LSFs from the filter coefficients. In step 210 of Fig. 2, each ~~Each~~ LSF  $\omega_i$ ,  $i = 0, 1, \dots, m-1$  contributes to a quadratic factor of the form,  $1 - 2 \cos(\omega_i)z^{-1} + z^{-2}$ . The polynomials  $P'(z)$  and  $Q'(z)$  are formed in step 220 by multiplying these factors using the LSFs that come from the corresponding polynomial:

$$P'(z) = \prod_{i=0}^{m_p-1} (1 - 2 \cos(\omega_{2i})z^{-1} + z^{-2})$$

$$Q'(z) = \prod_{i=1}^{m_q-1} (1 - 2 \cos(\omega_{2i+1})z^{-1} + z^{-2}).$$

The polynomials  $P(z)$  and  $Q(z)$  are computed by multiplying  $P'(z)$  and  $Q'(z)$  with the extra zeros at  $z = -1$  and  $z = +1$ . Finally, in step 230 the filter coefficients are computed by using the following equation:

$$A_m(z) = \frac{P(z) + Q(z)}{2}$$

which defines the relationship between the polynomial  $A_m(z)$  and the two inverse polynomials discussed earlier.

3. Please insert the following before the paragraph starting on page 5, line 12:

B3 The invention will be more readily understood after reading the following detailed description taken in conjunction with the accompanying drawing, in which:

FIG. 1 illustrates the growth of intermediate coefficient value experienced by processes in the prior art;

FIG. 2 is a flowchart of a prior art method of computing linear predictive coding filters from line spectral frequency coefficients; and

FIG. 3 is a flowchart depicting a method for calculating an inverse polynomial from line spectral frequency coefficients.

4. Please amend the paragraph starting on page 5, line 12 of the application as follows:

The invention is described further hereinafter, by way of example only, with reference to

B4 Fig. 1, ~~the accompanying drawing~~ which is a graphical representation of the intermediate

coefficient growth experienced in the prior art and in an example polynomial  $Q(z) = 1 - z^{-2N}$ .

5. Please amend the paragraph starting on page 5, line 18 of the application as follows:

b5  
It is assumed that the original polynomial is reconstructed by combining the zeros with increasing  $\omega_i$ . The maximum value of the largest coefficient during the recomputation procedure is plotted in Fig. 1 ~~the accompanying drawing~~. Note that the Y axis is logarithmic. For large order  $N$  the intermediate values of some of the coefficients become very high.

6. Please amend the paragraph starting on page 5, line 25 of the application as follows:

As an example, and for  $Q(z)$  with  $m$  is even, in step 310 of Fig. 3 the following ordering of the polynomials is used:

b6  
$$v_0[0] = 1 - z^{-1}$$

$$v_0[1] = 1 - 2 \cos \omega_1 z^{-1} + z^{-2}$$

$$v_0[2] = 1 - 2 \cos \omega_3 z^{-1} + z^{-2}$$

$$v_0[m_q] = 1 - 2 \cos \omega_{2 \cdot m_q - 1} z^{-1} + z^{-2}$$

7. Please amend the paragraph starting on page 6, line 8 of the application as follows:

b7  
In step 320, ~~the first step~~ the polynomials are combined two by two. Polynomial  $i$  is combined with polynomial  $[m_q - i]$ , this gives four intermediate polynomials  $v_i[i]$ :

$$v_1[0] = v_0[0] \cdot v_0[6]$$

$$v_1[1] = v_0[1] \cdot v_0[5]$$

$$v_1[2] = v_0[2] \cdot v_0[4]$$

$$v_1[3] = v_0[3]$$

8. Please amend the paragraph starting on page 6, line 18 of the application as follows:

In step 330, the ~~The~~ product  $v_2[0] \cdot v_2[1]$  gives the final result:

b7

$$v_3[0] = v_2[0] \cdot v_2[1]$$

9. Please amend the Abstract of the Disclosure on page 10, line 1 of the application as follows:

b9

The present invention provides for a method of determining filter coefficients from Line Spectral Frequencies by comprising recomputing  $P(z)$  and  $Q(z)$  polynomials and comprising calculating the  $\omega_i$  coefficients, characterised by the steps of ordering the polynomials in a series and reducing the number of polynomials in  $\omega_i$  in the ~~said~~ series by combining the polynomials in  $\omega_i$  two by two in a manner so as to arrive at two polynomials in  $\omega_i$  and determining the product of the ~~said~~ two polynomials.